



IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A transmission secondary electron emitter which emits secondary electrons generated by the incidence of primary electrons, the transmission secondary electron emitter comprising:

a secondary electron emitting layer which is made of diamond or a material containing diamond as a main component, and of which one surface is the surface of incidence for making the primary electrons incident thereon from a position outside of the secondary electron emitting layer, and the other surface is the surface of emission for emitting the secondary electrons corresponding to the incident energy of the primary electrons and generated in the secondary electron emitting layer; and

a voltage applying means for applying a predetermined voltage between the surfaces of the incidence and the emission of the secondary electron emitting layer, wherein

the voltage applying means includes a first electrode formed on the side of the surface of the incidence and a second electrode formed on the side of the surface of the emission for applying the predetermined voltage to form an electric field in the secondary electron emitting layer for accelerating the secondary electrons in the direction to the surface of the emission.

Claim 2 (Original): The transmission secondary electron emitter according to Claim 1, further comprising a supporting means for reinforcing the mechanical strength of the secondary electron emitting layer.

Claim 3 (Previously Presented): The transmission secondary electron emitter according to Claim 1, wherein the secondary electron emitting layer is made of polycrystalline diamond or a material containing polycrystalline diamond as a main component.

Claim 4 (Original): The transmission secondary electron emitter according to Claim 3, wherein the surface and the grain boundary face of the polycrystalline diamond of the secondary electron emitting layer are terminated with oxygen.

Claim 5 (Previously Presented): The transmission secondary electron emitter according to Claim 1, wherein the surface of the emission of the secondary electron emitting layer is terminated with hydrogen.

Claim 6 (Previously Presented): The transmission secondary electron emitter according to Claim 1, wherein the surface of the emission of the secondary electron emitting layer is terminated with oxygen.

Claim 7 (Previously Presented): The transmission secondary electron emitter according to Claim 1, wherein an active layer for lowering the work function of the secondary electron emitting layer is formed on the surface of the emission of the secondary electron emitting layer.

Claim 8 (Original): The transmission secondary electron emitter according to Claim 7, wherein the active layer of the secondary electron emitting layer comprises an alkali metal, an oxide of the alkali metal, or a fluoride of the alkali metal.

Claim 9 (Previously Presented): An electron tube comprising:
the transmission secondary electron emitter according to Claim 1;
an electron source for emitting the primary electrons to the transmission secondary electron emitter;
an anode for collecting the secondary electrons emitted from the transmission secondary electron emitter; and
an envelope for accommodating the transmission secondary electron emitter, the electron source, and the anode.

Claim 10 (Original): The electron tube according to Claim 9, wherein the electron source includes a photocathode for emitting photoelectrons excited by incident light to be detected as the primary electrons.

Claim 11 (Original): The electron tube according to Claim 9, wherein the electron source includes a photocathode for emitting photoelectrons excited by incident light to be detected as the primary electrons, and the anode has a fluorescent screen emitting light by the incidence of the secondary electrons.

Claim 12 (Original): The electron tube according to Claim 9, wherein the electron source includes a field emission electron source, and the anode has a fluorescent screen emitting light by the incidence of the secondary electrons.

Claim 13 (Original): The electron tube according to Claim 9, wherein the electron source includes a field emission electron source array in which a plurality of field emission electron sources are arranged in an array, and the anode has a fluorescent screen emitting light by the incidence of the secondary electrons.

Claim 14 (Canceled).